2013

M.Sc.

3rd Semester Examination

MICRIBIOLOGY

PAPER—MCB-304

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer any *two* questions from each group

Group—A

[Marks—20]

1. (a) Draw a diagram of aerobic fermenter. Write the functions of its different parts. 2+2

(b) Write short note on air lift fermenter. 3

(c) Write down the stages of a batch sterilization process. 3

2. (a) What do you mean by K_{La} ? Give its unit. Write short note one methods for K_{La} measurement. 1+1+2

(b) *Clostrioleum leotulinum* is considered as test organism in a fermentation process, its D value at 121°C is 3s. Calculate the processing time for 12D at this temperature. 3

(c) What are the dependent parameters of convective heat transfer process. What is the unit of heat transfer coefficient? Is there any basic relation ship between heat and momentum transfer? 3

3. (a) What are the different resistances acting during O_2 transfer in fermentation process? 3

(b) What do you mean by scale up process? What are the different criteria of fermenter scale up? 4

(c) Classify fermentation process on the basis cell mass production and product formation. 3

Group—B

[Marks—20]

4. (a) Mention the ideal characteristics of Industrial strain.

(b) Briefly describe the following steps in Beer brewing:

(i) Malting (ii) Wort Preparation (iii) Yeast fermentation. 2+(2+3+3)

5. (a) Briefly describe the methods of acetification in Vinegar manufacture.

(b) Write a note on steroid biotransformation. 5+5

6. Write Notes on :

(a) GATT;

(b) Tetracycline production using *Streptomyces* inoculum;

(c) Pure culture technique. 3+3+4